

EXHIBIT 1B

Exhibit B

Expert Disclosure - Dr. Stephanie Hurder

(March 5, 2025)

Dr. Stephanie Hurder is a Partner & Co-Founder of Prysm Group. She will be called to testify regarding blockchain technology, digital assets, tokens, and token economics, as further described below.

A. Qualifications and Prior Testimony

Dr. Hurder earned an A.B. in Mathematics and Economics, *magna cum laude* and Phi Beta Kappa; an A.M. in Economics; and a Ph.D., Business Economics, all from Harvard University.

Dr. Hurder has been a Partner and Co-Founder of Prysm Group since 2018. She provides economic advisory services to projects that incorporate blockchain, digital assets, and tokens. These advisory services include: the design and allocation of blockchain-based tokens and cryptocurrencies, including determination of use cases and token distribution schedules; the design of incentive systems and marketplaces related to tokens and cryptocurrencies; and the design of token-enabled governance systems, such as Decentralized Autonomous Organizations (DAOs). Her design work frequently includes empirical analysis of existing blockchain-based projects using publicly available tools such as Etherscan, CoinMarketCap, and Dune; review and analysis of design documentation provided by individual projects; and review and application of relevant academic and institutional research.

Dr. Hurder has provided economic advisory services to dozens of projects, ranging from blockchain-native startups to Fortune 100 companies, including: 1) an analysis and redesign of the token economics of Hedera Hashgraph's HBAR token, which had raised \$120M at the time of the project; 2) a research engagement with Ernst & Young LLP ("EY") on the potential impact of using a digital technology-based approach to better manage public money; 3) a design of the token distribution and incentive model for the Local Health Alert System, a project supported by a \$6.25 million award from the National Institute of Standards and Technology (NIST); and 4) a comprehensive design of a DAO for a consortium related to one of the largest stablecoins by market capitalization.

Dr. Hurder's expert analysis has been cited by the Ninth Circuit Court of Appeals' decision in *E. Ohman J:or Fonder AB v. NVIDIA Corp.*, 81 F.4th 918 (9th Cir. 2023); in an amicus brief submitted by the United States Solicitor General in *NVIDIA Corp., et al. v. E. Ohman J:or Fonder AB, et al.*, No. 23-970, 2024 WL 4405281 (Oct. 2, 2024); and in oral argument in the United States Supreme Court case *NVIDIA Corp., et al. v. E. Ohman J:or Fonder AB, et al.*, No. 23-970 (Nov. 13, 2024).

Dr. Hurder has held numerous professional affiliations as an expert and advisor in the economics of blockchain and cryptocurrency, including as a Visiting Scholar at the Center for

Cyber-Physical Systems and the Internet of Things at the University of Southern California, and an Academic Advisor to the World Economic Forum's Blockchain and Digital Currency Group.

Dr. Hurder has been an invited guest speaker on topics related to the economics of blockchain, tokens, and governance at universities on three continents, including Stanford, the University of California, Los Angeles, the University of Chicago, the Simons Institute at the University of California, Berkeley, the University of Bristol, Cambridge University (UK), and the Australian National University. She has spoken at numerous industry conferences and events, including SXSW, Consensus, and the Practicing Law Institute.

Dr. Hurder has written extensively on the economics of blockchain, tokens, and governance. Her book chapter "Cryptoeconomics: Designing Effective Incentives and Governance Models for Blockchain Networks Using Insights from Economics" was published in *Blockchains and the Token Economy: Studies in Theory and Practice* by Palgrave-Macmillan. Dr. Hurder also wrote a regular opinion column for Coindesk, the leading news source for blockchains and cryptocurrencies.

A copy of her CV is being produced along with this disclosure.

B. Anticipated Opinions

If called as a witness at trial, Dr. Hurder may offer the opinions outlined below based on her academic and professional education, training, and experience working on the economics of blockchain projects and tokens, including cryptocurrencies, as well as her review and analysis of documents and other materials, including (i) the pleadings in this case; (ii) the disclosure submitted by the government's preferred experts; (iii) the materials provided by the government in connection with those disclosures; and (iv) any additional materials cited herein which Dr. Hurder relied on in forming her expert opinions.

To the extent necessary, Dr. Hurder will define the following terms: token, Ethereum, ETH, Bitcoin, BTC, smart contract, staking, vesting schedule, vesting contract, airdrop, token sales, incentive payments, decentralized exchange, DEX, liquidity, liquidity provision, liquidity mining, stablecoin, correlation, statistically significant, and validator.

Section 1: Blockchain and Token Ecosystem Design

1. Blockchain-based projects and tokens require economic design, which is frequently called "cryptoeconomics," "token economics," or "tokenomics."¹ Cryptoeconomics combines academic research in economics, data analysis, and experimentation to design successful blockchain-based projects and token economies (Barrera and Hurder 2022).

¹ The terms are used interchangeably.

- a. Blockchain-based projects can have a variety of goals around outcomes, such as bootstrapping and user adoption; quality or cost of service provision; the value trajectory of a token; the level of decentralization; and others.
 - b. These outcomes require various groups of stakeholders to adopt specific behaviors, such as contribution of resources or participation in decision-making processes.
 - c. Cryptoeconomics applies insight from fields such as contract theory, market design, the economics of information, monetary economics, and social choice to design systems that incentivize these behaviors.
 - d. Cryptoeconomics can take into account numerous factors, including:
 - i. The quantity of a token created and the timing.
 - ii. The uses, or “use cases,” of the token. These can include: paying for goods or services (utility token); participating in governance (governance token); designating the ownership of real property (security token); and others. These uses may also be combined.
 - iii. The allocation of the token to various parties, such as the founders, community participants, investors, or others.
 - iv. The method and timing of token distribution, such as airdrops, token sales, incentive payments, or vesting schedules.
2. A decentralized application (“dApp”) is a project built on an underlying blockchain. A token launched by a dApp has distinct tokenomics from the native token of a blockchain.
 - a. A blockchain is a distributed ledger maintained by a peer-to-peer network of computers. It has protocols, such as consensus mechanisms, that facilitate tasks such as transaction processing.
 - b. A blockchain typically has a native token that is used to pay for transaction processing and other computational tasks. This provides a use case for the native token.
 - i. BTC is the native token of the Bitcoin blockchain.
 - ii. ETH is the native token of the Ethereum blockchain.
 - c. Projects can also build decentralized applications (“dApps”) on a blockchain. dApps may also have tokens whose use cases need to be fully specified by the founding team.
 - d. Users of dApps may need to pay fees to the underlying blockchain. For example, users of a dApp built on Ethereum may need to pay transaction processing (“gas”) fees in addition to any fees charged by the dApp itself.
3. The price of a blockchain-based token is a complex function of both the supply parameters and the demand drivers of the token (*see e.g.*, Athey et. al. 2016, Catalini and Gans 2018, Cong et. al. 2021, Liu et. al. 2022).
 - a. Demand for a token can be driven by a number of factors, including the token’s use cases, network effects, blockchain and cryptocurrency market sentiment, and momentum.

- b. A token that has well-developed, popular use cases can have robust demand. This demand can support and may increase the token's price.
 - c. The mathematical relationship between the mechanics of the use cases and the token price can be complex and nonlinear, depending on the specific economic design.
 - d. The price of a blockchain-based token differs from the price of equity in a company in that it is not necessarily a function of the discounted present value of future profits of an enterprise.
 - e. However, it is similar in that it has multiple complex determinants.
- 4. Blockchain-based projects frequently set goals for decentralization, in that control of project development, management, and/or governance is distributed across multiple entities rather than having a single (formal or informal) locus of control.
 - a. Projects aim for decentralization for many reasons, including community ethos and ideology; to distribute work among many parties; or to comply with securities or other laws.
 - b. Many non-blockchain projects also have decentralized governance. For example, the internet is governed by a variety of nonprofit, government, and for-profit entities.
 - c. Projects frequently launch via a founding entity and decentralize over time. The founding team must decide how much control to keep versus distribute to the community and design a process by which the transfer of control takes place.
 - d. Blockchain-based tokens can enable decentralization, since entry can be permissionless, smart contracts can enable automation, and the appropriate tokenomics can incentivize stakeholders to adopt specific beneficial behaviors.
- 5. A common model of decentralization for blockchain projects is to establish a Decentralized Autonomous Organization (a "DAO").
 - a. A DAO is a blockchain-based system where token holders can submit or vote on proposals regarding the management or governance of a project.
 - b. Many DAOs have the end goal of significant decentralization, with community participants submitting proposed upgrades and having sufficient voting power to eventually override the founding team.
 - c. Successful DAOs require comprehensive end-to-end design of decision-making processes (Barrera and Hurder 2022). These include:
 - i. The scope of decisions over which the DAO will have jurisdiction.
 - ii. The stakeholders whose views or wishes should be represented.
 - iii. Resources and processes for research and development.
 - iv. A clear proposal submission process.
 - v. Information dissemination processes to enable participants to make high-quality decisions.
 - vi. Voting processes that engage the relevant stakeholders.
 - vii. A process to ensure implementation of successful proposals.

6. Decentralized projects frequently seek to maximize something other than short-term founder profit (see e.g., Cong et. al. 2022, Gan et. al. 2023). To further these goals:
 - a. Founders may give away significant quantities of tokens to the community, as incentives, etc., to attract users.
 - b. Founders may implement vesting contracts on their own token allocations as a means to signal their long-term commitment to building the project.
 - c. Projects may need to delay or forgo entirely collecting revenues from sources such as protocol fees.
7. All blockchain-based projects, even those that aim to eventually decentralize or maximize objectives other than profits, need to determine how they will fund start-up and ongoing costs.
 - a. Start-up costs can include marketing, conference attendance, technical development, legal advisory, and security and economic audits.
 - b. Ongoing costs can include hosting expenses, fees to stakeholders such as validators, research and development, etc.
 - c. Start-up costs can be funded via a variety of sources including operating revenues; selling tokens to investors; selling equity to investors; community grants; and others.
 - d. Ongoing costs can be funded via a variety of models, including streams of operating revenues, such as can be generated through a protocol fee,² token sales, or others.

Section 2: Prior to sanctions, the price of TORN was strongly and significantly correlated with overall movements in crypto markets. Tornado Cash smart contract activity did not generate streams of revenues or profits for the project, and therefore any gains in TORN token price were not due to expectations of token holders receiving ETH distributions from Tornado Cash smart contract activity.

8. TORN is an Ethereum-based token created and launched in December 2020 and which began trading in February 2021. Ten million TORN tokens were generated and allocated as follows:
 - a. 500,000 TORN were allocated to airdrops to early adopters of Tornado Cash ETH pools.
 - b. 1,000,000 TORN were allocated to provide “anonymity mining” rewards for users of the Tornado Cash smart contracts.³
 - c. 5,500,000 TORN were allocated to the treasury controlled by the Tornado Cash DAO (see item 10 below).

² A protocol fee is a charge that a user must pay to utilize a blockchain-based platform.

³ Anonymity mining rewards were paid to users who made deposits into the Tornado Cash smart contracts. The amount of reward was based on the amount of time the user left the deposits in the smart contracts. The concept is similar to liquidity mining, which is common in decentralized finance.

- d. 3,000,000 TORN were allocated to founding developers and early supporters. Of these, 822,407 TORN were allocated to each of the three founders and the remainder were allocated to investors.
9. The founders raised initial investments to fund startup activities via their Peppersec corporate entity. As discussed above, such a model is common for decentralized projects.
- a. Peppersec executed a convertible note with one investor and a SAFE with a warrant with another, each of which could be converted later either to equity in Peppersec or tokens that are issued by an affiliate.
 - b. These funds were used to pay for costs such as domain hosting, software development, and founder's salaries.
10. At its launch, TORN was a governance token that facilitated the operations of an effective DAO.
- a. A governance token is a token that allows its holders to participate in the decision-making processes of a decentralized project.
 - b. Many popular and valuable tokens, such as Uniswap's UNI and Compound Finance's COMP, are governance tokens. Both UNI and COMP are used only for participation in their project's DAO and both tokens have sustained value over several years.
 - c. Beginning in February 2021, holders of TORN tokens could stake their tokens and participate in the Tornado Cash DAO.
 - d. Users with sufficient staked tokens could submit and vote on proposals related to numerous topics, including TORN token allocations and the governance procedures used by the DAO.
11. The Tornado Cash DAO was actively used by the community.
- a. Based on Dr. Hurder's experience, the Tornado Cash DAO was active. Dr. Hurder has examined the proposals and will testify about the types of proposals considered.
 - b. Between February 2021 and August 2022, participants in the DAO submitted and voted on 13 distinct proposals.
 - c. Users of the Tornado Cash DAO were willing to purchase substantial amounts of TORN to participate in proposal votes. For example, in the vote for Proposal 13, a single address cast ~ 73k votes against the proposal, which would have required staking ~\$1.3M of TORN.
 - d. TORN as a standalone governance token had value to buyers. Between June 11, 2021, and the launch of the relayer registry on March 1, 2022, the average price of TORN was \$46.41.
 - e. After sanctions, participants in the DAO continued to be active. For example, between September 2022 and June 2024, the DAO voted on 41 proposals.⁴

⁴ Dr. Hurder may update this figure to include proposals through the time of trial.

12. The TORN token was at no time required to use the Tornado Cash smart contracts.
 - a. The Tornado Cash smart contracts operated for close to a year before the TORN token was created.
 - b. After TORN was introduced, Tornado Cash smart contract users could still deposit and withdraw funds without any interaction with the TORN token.
13. Tornado Cash smart contract deposits and withdrawals did not generate any streams of ETH revenues or profits. All withdrawn ETH was retained by the withdrawer unless an optional relayer was used and the relayer charged a fee. As such, owners of the TORN token could not expect profit or revenue distributions of ETH from Tornado Cash smart contract activity as a benefit of token ownership.
 - a. The Tornado Cash smart contracts charged no protocol fee or any other fee for use. Users of the Tornado Cash smart contracts could withdraw 100% of the funds that they deposit, less Ethereum gas fees.
 - b. Users of the Tornado Cash smart contracts had the option to, but were not required to, engage third-party relayers to assist with withdrawals.
 - c. If a relayer was used, it had the option to collect a fee in the form of a portion of the withdrawn ETH. The lower the fee charged, the more likely a relayer was to be selected. The relayer fee was retained by the relayer.
 - d. Since all funds were either retained by the withdrawer or by the optional relayer, the Tornado Cash smart contracts had no project revenues or profits.
 - e. Therefore, holders of TORN tokens could not expect ETH profit or revenue distributions from the project as a benefit of being a token holder.
 - f. Users were also not charged a fee by the User Interface ("UI") or the Command Line Interface ("CLI"). The UI and CLI similarly generated no project revenues or profits that could be distributed to TORN token holders.
14. In March 2022, the community voted to launch a relayer registry, which was a list of relayers available to users of Tornado Cash via the UI.
 - a. The community voted to institute the relayer registry via governance Proposal #10.
 - b. To be included in the relayer registry, potential relayers had to hold and stake a minimum of 300 TORN tokens.
 - c. The more TORN tokens that a relayer staked, the more likely they were to be chosen as a relayer for a transaction in which a user requested a relayer from the registry.
 - d. Users of the UI were not required to use a relayer from the relayer registry. They could choose their own relayer or use no relayer at all.
 - e. Relayers who were selected as a relayer for a transaction were required to send a fraction of their staked TORN to the Governance smart contract.
15. In Section 16 of his disclosure, the government's expert Mr. Werlau asserts the following points: 1) the February 2022 changes, including the introduction of the relayer registry, constituted an "upgrade to the Tornado cash architecture"; 2) the introduction of the

relayer registry created “increased market demand for [TORN] tokens”; and 3) TORN token holders staking their tokens in the Governance smart contract received “a share of the commission earned” from the relayers. All three are incorrect.

- a. Characterizing the described token activities as the “Tornado Cash infrastructure” is inaccurate. The relayer registry was a second, optional feature similar to a directory that was built into the UI, not a direct feature of the Tornado Cash smart contracts.
- b. The relayer registry was optional for users of the Tornado Cash smart contracts, users of the UI and CLI, and relayers. The only entities required to purchase TORN tokens due to the introduction of the relayer registry were relayers who wanted to be in the registry.
- c. The relayer registry was an additional use case for TORN. Although use cases that are well-designed and widely adopted can drive demand for tokens and affect token price, many use cases fail to achieve the utility or adoption required to do so.
- d. Academic research on the determinants of blockchain-based token prices have shown that fundamentals-based models have mixed results *at best* in explaining and predicting token price movements.
- e. As such, the conclusion that the introduction of a use case will lead to a material increase in token price requires substantial theoretical or empirical justification. The government’s expert provides no rationale at all—via academic research, economic reasoning, or empirical analysis—that the equilibrium impact of the relayer registry would be a material increase in TORN token price.
- f. The government’s expert fails to take into account, among many things, the following:
 - i. The token holding requirements required by the registry were minimal compared to the circulating supply of TORN. A relayer was required to stake at least 300 TORN to be listed in the registry. At the time of the relayer registry launch on March 1, 2022, there were approximately 2.4 million TORN tokens in circulation. Relayers would need to buy and stake enormous amounts of TORN tokens above the minimum to materially impact the TORN token price via staking.
 - ii. The impact of TORN transferred from relayers to the Governance smart contract on supply and demand for TORN is *ex ante* unknown. As the government’s expert acknowledges, transfers of TORN from relayers were deposited in a vault to be deployed by governance participants. These tokens could be used for a variety of purposes, such as paying protocol expenses. When and how governance participants choose to deploy these tokens affected the impact that these transfers have on TORN token price.
 - iii. The amount of TORN that could be expected to be transferred to the governance smart contracts from relayers was minute in comparison to the amount of TORN over which the governance participants already had control.

1. The DAO treasury was allocated 5.5M TORN to vest over 5 years.
 2. As of the launch of the relayer registry on March 1, 2022, 1.1M TORN had vested and been transferred to the Governance smart contract.
 3. According to data provided by FBI Special Agent Joel DeCapua, an average of ~127k ETH per month were withdrawn from Tornado Cash smart contracts in the six months prior to the launch of the relayer registry.
 4. As discussed previously, users of Tornado Cash were not required to use a relayer at all, let alone the relayer registry.
 5. According to Werlau (and subject to verification and rebuttal), the amount of TORN transferred from relayers to the governance smart contract was the number of TORN equal to 0.3% of the dollar value of the ETH transferred in the withdrawal.
 6. Applying historical token prices, this would imply that the introduction of the relayer registry would provide *at most* an incremental ~31k TORN per month to be allocated by governance participants. This is less than 3% of the DAO's treasury of TORN at the time of the registry launch and 0.5% of the total TORN allocation to the DAO treasury.
- g. TORN token holders did not receive "a share of the commissions." According to Werlau (and subject to verification and rebuttal), TORN transferred from relayers to the Governance smart contract were stored in a vault, and participants in governance could vote on how to deploy these tokens. These tokens did not by any means need to be distributed to TORN token holders; they could be used for business expenses, community funds, or other investments.
16. Empirically, the implementation of the relayer registry did not benefit the price of TORN.
- a. TORN had previously traded as high as \$79.10 per token in September 2021, prior to the relayer registry proposal or launch.
 - b. In contrast, the highest price for TORN post relayer registry launch was only \$59.34 on March 3, 2022.
 - c. After the relayer registry launch, the price of TORN fell 50% between its relative high on March 3, 2022 and August 7, 2022, which was a greater price drop than either ETH (41%) or BTC (46%) in the same time period.
17. The price of TORN has consistently exhibited a strong correlation with crypto markets and market sentiment overall, as proxied by ETH and BTC. This was especially true in the period after the relayer registry launch.
- a. Between the launch of TORN on Binance on June 11, 2021, and August 7, 2022, the price of TORN had a significant and strong correlation of 0.73 with the price of BTC and 0.65 with the price of ETH.
 - b. Between the launch of the relayer registry on March 1, 2022, and August 7, 2022, the price of TORN had a significant and extremely strong correlation with BTC

(0.89) and ETH (0.92), indicating TORN was quite closely mirroring the crypto market.

Section 3: TORN token holders did not benefit from the use of Tornado Cash by illicit actors; in fact, illicit use resulted in a large decrease in TORN token price.

18. At the time of the creation of the TORN token, public evidence was available that government scrutiny was detrimental to a token's price.
 - a. In December 2020, Ripple was sued by the Securities and Exchange Commission ("SEC") for securities law violations with respect to its XRP token. XRP lost 20% of its value in a day.
 - b. XRP was also threatened with delisting from major exchanges such as Coinbase, Crypto.com, etc., which could have materially impacted liquidity and value.
19. The government alleges that approximately \$450M of stolen funds from the Axie Infinity Ronin Bridge hack were moved through the Tornado Cash smart contracts. Despite the significant amount of illicitly obtained ETH allegedly moving through the Tornado Cash smart contracts, there was no benefit to the price of TORN.
 - a. Supplemental material provided by FBI Special Agent Joel DeCapua indicates that the alleged deposits from the Ronin hack represented a substantial increase in illicitly obtained funds deposited in the Tornado Cash smart contracts.
 - i. According to SA DeCapua (and subject to verification and rebuttal), he Ronin Hack was by far the largest of the notable exploits that were transmitted through Tornado Cash from September 2020 through July 2022. The Ronin hack alone constituted ~38% of the \$1.191B in total exploits calculated by Agent DeCapua.
 - ii. The Ronin hack in late March 2022 was the first major exploit related to Tornado Cash since early February 2022. The four prior hacks occurring in 2022 were of much smaller scale.
 - b. The data provided by Agent DeCapua indicates that this alleged increased volume of illicitly obtained deposits to the Tornado Cash smart contracts did not benefit the price of the TORN token.
 - i. Document "Axie_Ronin_to_Tornado_Cash_20241101" provided by Agent DeCapua specifies the timing and amounts of the deposits of Ronin hack proceeds into the Tornado Cash smart contracts between April 4, 2022, and May 19, 2022.
 - ii. The correlation between the price of TORN and these deposit amounts was 0.03. This indicates that an increase in these deposit amounts did not result in an increase in the price of TORN.
 - iii. During the period of these deposits, the price of TORN in fact decreased 18%, from \$45.76 to \$37.49.
 - c. Public knowledge of the movement of these allegedly illicitly obtained funds also did not benefit the TORN token price. In the two weeks after the Ronin hack became public on March 29, 2022, TORN's price declined faster than the market.

The TORN token price fell 19% from \$52.27 to \$42.53 while ETH's price dropped only 11% and BTC 16%.

20. The imposition of sanctions was devastating for the TORN token price. In the two weeks after sanctions, the TORN price dropped 67%, from \$29.71 on August 7, 2022 to \$9.75 on August 21, 2022. In comparison, the market dropped only slightly (ETH 6%, BTC 7%).

21. Sanctions decreased participation in the DAO, a demand driver for the TORN token that in theory could have sustained or lead to increases in TORN token price. After the imposition of sanctions, however, the average number of addresses voting on the average DAO proposal dropped from 42 to 10.⁵

22. The delisting of the token from Binance due to sanctions was also devastating to the price. In the two weeks after the Binance delisting was announced, the TORN token experienced a 63% price drop from \$3.81 on November 26, 2023 to \$1.42. In contrast, ETH rose 14% and BTC 17% in the same period.

Section 4: Founders' token allocation structure and defendant Storm's token sales.

23. The founders structured the delivery of their founders' token allocations to incentivize sustained token price growth and long-term investment in the project.

- a. Based on data provided by Dr. Matthew Edman, each founder received his allocation of 822,407 TORN via the following vesting schedule:
 - i. 274,135.67 tokens vested after slightly less than a year, on December 13, 2021.
 - ii. The remaining 548,271.33 tokens vested over the course of the next two years in 24 distributions of 22,844.64 tokens per 30 days.
- b. Because of the three-year vesting structure, the founders would have benefitted from the TORN token price remaining high for at least three years.

24. Other than their founders' allocations, founders could only obtain TORN via channels that were accessible to the entire user community. These include:

- a. Receiving token rewards via the early adopter airdrops and the anonymity mining allocations for their own use of the Tornado Cash smart contracts.
- b. Buying and selling tokens on exchanges.
- c. Earning token rewards for providing liquidity on decentralized exchanges.

25. The founders received no compensation from the Tornado Cash smart contract activity or UI activity. Neither had a protocol fee to fund such compensation.

⁵ This includes proposals through June 2024. Dr. Hurder may update this figure to include proposals through the time of trial.

26. IRS Special Agent George discusses certain sales of TORN in his disclosure. Based on data provided by NAXO, Dr. Hurder will analyze Mr. Storm's vesting, claims, and sales of TORN.
27. IRS Special Agent George purports to trace funds used by Defendant Storm to purchase two residences (the "Auburn House" and the "Lake Tapps House") and a 2022 Tesla. None of these purchases could have plausibly been funded by sales of Defendant Storm's founders allocation of TORN tokens.
 - a. SA George credits the sources of the purchases to three sources: Multisender profits, withdrawals from the Tornado Cash smart contracts, and TORN token distributions.
 - b. Multisender profits are in ETH and are profits from a separate business, as SA George admits.
 - c. Per SA George's supplemental materials, the withdrawals from the Tornado Cash smart contracts were in ETH tokens and thus unrelated to TORN.
 - d. Per SA George's supplemental materials, the TORN token distributions were early adopter TORN distributions.
 - i. Per SA George (and subject to verification and rebuttal), these funded only \$14,645.67, or 4% of the approximately \$375,000 purchase price of the Auburn House and \$21,700 of the purchase price of the Tesla.
 - ii. Per SA George's supplemental materials, these early adopter distributions were received by Defendant Storm and exchanged for stablecoins on March 12, 2021.
 - iii. As discussed above, the early adopter TORN distributions were available to all Tornado Cash users and are unrelated to the founders' allocations of TORN tokens.
 - iv. The exchange from TORN to stablecoins took place nine months before Defendant Storm received any founders' tokens.
 - e. Per SA George's supplemental materials, the Lake Tapps House was purchased in June 2021, prior to the vesting of any of the founder's allocation of tokens.
 - f. Accordingly, zero percent of these purchases were funded with proceeds from Defendant Storm selling his founder's allocation of TORN.

Sources consulted:

1. Tornado Cash Medium posts, project documentation, and governance website.
2. The government's expert disclosure production.
3. IntoTheBlock token price and circulating supply data for TORN, BTC, and ETH.
4. Etherscan data for TORN token activity.
5. Peppersec corporate records.
6. TORN vesting data from Dr. Matthew Edman.
7. Book chapters:
 - a. Barrera, C. and S. Hurder. "Cryptoeconomics: Designing Effective Incentives and Governance Models for Blockchain Networks Using Insights from

Economics” *Blockchains and the Token Economy: Studies in Theory and Practice*, edited by M. Lacity and H. Treiblmaier, Palgrave-Macmillan, 2022.

8. Academic articles:

- a. Athey, S., Parashkevov, I., Sarukkai, V., and J. Xia. “Bitcoin Pricing, Adoption, and Usage: Theory and Evidence.” Stanford University Graduate School of Business Research Paper No. 16-42, 2016.
- b. Catalini, C. and J. S. Gans. “Initial Coin Offerings and the Value of Crypto Tokens.” NBER Working Paper No. w24418, 2018.
- c. Cong, L.W., Li, Y., and N. Wang. “Tokenomics: Dynamic Adoption and Valuation.” *The Review of Financial Studies*, vol. 34, no. 3, 2021, pp. 1105-1155.
- d. Cong, L.W., Li, Y., and N. Wang. “Token-Based Platform Finance.” *Journal of Financial Economics*, vol. 144, no. 3, 2022, pp. 972-991.
- e. Gan, R., Tsoukalas, G., and Netessine, S. “Decentralized Platforms: Governance, Tokenomics, and ICO Design.” *Management Science* (forthcoming), 2023.
- f. Liu, Y., Tsyvinski, A. and Wu, X. “Common Risk Factors in Cryptocurrency.” *The Journal of Finance*, vol. 77, 2022, pp. 1133-1177.

9. Coindesk articles:

- a. <https://www.coindesk.com/markets/2020/12/23/first-mover-xrp-plunges-20-as-traders-assess-secs-ripple-suit>
- b. <https://www.coindesk.com/business/2020/12/24/coinbase-other-big-exchanges-between-rock-and-a-hard-place-on-delisting-xrp>
- c. <https://www.coindesk.com/markets/2020/12/29/cryptocom-to-delist-suspend-xrp-in-the-us-after-secs-ripple-suit>
- d. <https://www.coindesk.com/tech/2022/03/29/axie-infinitys-ronin-network-suffers-625m-exploit>

Respectfully submitted,

Signed by:



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Dr. Stephanie Hurder